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10/726,002	12/01/2003	Zhen Liu	YOR920030522US1	5240

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Moser, Patterson & Sheridan
Suite 100
595 Shrewsbury Avenue
Shrewsbury, NJ 07702

EXAMINER	
GILLIS, BRIAN J	

ART UNIT	PAPER NUMBER
2141	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/726,002	LIU ET AL.	
	Examiner	Art Unit	
	Brian J. Gillis	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *03042004 and 05112007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4, 6-13, 18 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the network resources" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 4 recites the limitation "the plurality of application servers" in lines 6, 9, and 10. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "the network" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "the network" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the network" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "said list of uses" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the network addresses" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the network" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the network" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "said list of users" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "said data" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 recites the limitation "the network" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the indexing of the applications" in lines 7-8. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the network map" in line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the network map" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "the application servers" in lines 8 and 12-13. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "the users" in line 13. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "the network" in line 2. There is insufficient antecedent basis for this limitation in the claim.

As for claims 5-11, 13-17, and 19-22 which claim dependency from independent claims 4, 12, and 18, these claims are also rejected under 35

U.S.C. 112, second paragraph for insufficient antecedent basis per the rationale of claims 4, 12, and 18.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Yanosy (US PGPUB US2003/0217128).

(Claim 1 discloses) a method of providing communication support for collaborative applications comprising abstracting a network and application server resources at a middleware level; and supporting the middleware level by indexing resources in a network aware and application aware manner (Yanosy shows a middleware application has a quality of service knowledgebase which stores information of application requirements and network capabilities (figure 2, paragraphs 16 and 18)).

(Claim 2 discloses) the method of claim 1, further including the step of indexing a plurality of users and their communication interests in an application

space (Yanosy shows indexing applications and their requirements (figure 2, reference #44)).

(Claim 3 discloses) the method of claim 2, further including the step of forming a communication overlay tree that provides communication links to application servers and to said plurality of users (Yanosy shows a negotiator connects the application to the host (figure 5, reference #60)).

(Claim 4 discloses) a communication network, comprising: a plurality of network resources having network constraints, the network resources including application servers controlled by an application having an application space (Yanosy shows multiple applications each having quality of service requirements (figure 1, figure 2 reference #44, and paragraph 44).); and a middleware server connected to said plurality of network resources, including the plurality of application servers, said middleware server for establishing an attribute space based on attribute information that includes said network constraints and on said application servers, the middleware server for indexing the plurality of application servers to reflect their positions in said attribute space, the middleware server further for implementing a communication overlay tree between the plurality of application servers and the middleware server based on network constraints and on the application space (Yanosy shows middleware indexes the applications and their requirements and a negotiator connects the applications to the host (figure 2, reference #44, figure 5, reference #60 and figure 6)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanosy (US PGPUB US2003/0217128) in view of Garcia et al (US PGPUB US2003/0101278).

Claim 5 discloses the communication network of claim 4, further including a plurality of users, each having a communication interest in said application space, and where the middleware server indexes the plurality of users according to communication interest to form user index identifiers; and where the communication overlay tree is implemented based on the plurality of users and on their communication interests. Yanosy teaches the limitations of claim 4 as recited above. It fails to teach a plurality of users, each having a communication interest in said application space, and where the middleware server indexes the plurality of users according to communication interest to form user index identifiers; and where the communication overlay tree is implemented based on the plurality of users and on their communication interests. Garcia et al teaches a map is made indexing clients and mapping clients to servers based on distances and server load (paragraphs 52 and 53).

Yanosy and Garcia et al are analogous art because they are both related to distributing resources.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the mapping feature in Garcia et al with the system in Yanosy because the best server for servicing a request is able to be determined (Garcia, paragraph 47).

Claim 6 discloses the network of claim 4 where the middleware server indexes network addresses of said plurality of users. Yanosy teaches the limitations of claim 4 as recited above. It fails to teach the middleware server indexes network addresses of said plurality of users. Garcia et al teaches an index is maintains containing the client addresses (paragraph 72).

Yanosy and Garcia et al are analogous art because they are both related to distributing resources.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the indexing feature in Garcia et al with the system in Yanosy because the best server for servicing a request is able to be determined (Garcia, paragraph 47).

Claim 7 discloses the network of claim 5 where the middleware server provides said application with user index identifiers via an application server. Yanosy further teaches the middleware communicates between the application and the host platform (paragraph 32).

Claim 8 discloses the network of claim 7 where the application server sends said middleware server a list of users and data that is to be distributed to

users on said list of users, such that said middleware server identifies network locations of said users on said list of uses, and such that said middleware server sends data that is to be distributed to the network addresses of users on said list of users. Yanosy further teaches the application notifies the middleware of a request and the middleware sends the data between the appropriate clients and servers (paragraph 29).

Claim 9 discloses the network of claim 8 wherein said application uses said user index identifiers to produce lists of users to be notified upon an occurrence of a notification event in said application space, and such that said list of users is sent upon an occurrence of a notification event. Garcia et al further teaches neighbors are sent an updated list when an updated version is detected (paragraph 177).

Claim 10 discloses the network of claim 7 wherein said application server sends said list of users and said data using application program interfaces. Yanosy further teaches communication via API's (figure 1).

Claim 11 discloses the network of claim 4 wherein a change in a network constraint induces said middleware server to implement a new communication overlay tree. Yanosy teaches the limitations of claim 4 as recited above. It fails to teach a change in a network constraint induces said middleware server to implement a new communication overlay tree. Garcia et al further teaches the mapping may change based on network changes (paragraph 53).

Yanosy and Garcia et al are analogous art because they are both related to distributing resources.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the mapping feature in Garcia et al with the system in Yanosy because the best server for servicing a request is able to be determined (Garcia, paragraph 47).

Claim 12 discloses a method of virtualizing network resources to support collaborative communications in a network having application servers and users that have communication interests, the method comprising the steps of: constructing a scalable network map; indexing application servers according to their position in the network; indexing users according to their communication interest; generating a communication overlay tree based on the indexing of the applications, on the indexing of the users, and on the network map; and supporting communications between application servers and users over the communication overlay tree. Yanosy teaches a negotiator connects the application to the host (figure 5 reference #60). It fails to teach constructing a scalable network map; indexing application servers according to their position in the network; indexing users according to their communication interest and supporting communications between application servers and users over the communication overlay tree. Garcia et al teaches a map is created (paragraph 52), servers are mapped based on their distance and load (paragraph 52), clients are mapped (paragraph 72), and users are mapped to servers based on the distance and server load (paragraph 52 and 53).

Yanosy and Garcia et al are analogous art because they are both related to distributing resources.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the mapping feature in Garcia et al with the system in Yanosy because the best server for servicing a request is able to be determined (Garcia, paragraph 47).

Claim 13 discloses the method of claim 12 wherein the network map is further based on supporting service level agreements. Yanosy further teaches mapping is based on quality of service requirements (paragraph 31).

Claim 14 discloses the method of claim 12 wherein supporting communications includes operating according to middleware software. Yanosy further teaches middleware negotiates between the application and the host (paragraph 30).

Claim 15 discloses the method of claim 12 wherein generating a communication overlay tree is repeated upon changes to the network. Garcia et al further teaches updates are made based on network changes (paragraph 53).

Claim 16 discloses the method of claim 12 wherein indexing users includes indexing a new user to the network. Garcia et al further teaches a map is updated when changes occur (paragraph 53).

Claim 17 discloses the method of claim 12 wherein an application server is indexed if it enters the network. Garcia et al further teaches a map is updated when changes occur (paragraph 53).

Claim 18 discloses a method of operating a communication network, comprising the steps of: identifying a plurality of network resources and their network constraints; identifying a plurality of application servers that are

controlled by an application having an application space; identifying a plurality of users and a communication interest in the application space of each user; and indexing the application servers to reflect their position in an attribute space; indexing said plurality of users according to communication interests; forming a user index identifier for each user of said plurality of users; and establishing a communication overlay tree between the application servers and the users based on the identified network constraints and on the indexed plurality of users. Yanosy teaches multiple applications each have quality of service requirements (figure 1, figure 2 reference #44, and paragraph 17), the applications are identified in the application knowledge base (figure 2 reference #44), and users are indexed and stored (figure 2 reference #44). It fails to teach identifying a plurality of users and a communication interest in the application space of each user; and indexing the application servers to reflect their position in an attribute space; indexing said plurality of users according to communication interests; and establishing a communication overlay tree between the application servers and the users based on the identified network constraints and on the indexed plurality of users. Garcia et al teaches clients and servers are mapped (paragraph 52), the servers are mapped based on position (paragraph 52 and 53), the clients are mapped to the servers according to criteria (paragraph 52), and the mapping provides servers to clients based on distance and server load (paragraphs 52 and 53).

Yanosy and Garcia et al are analogous art because they are both related to distributing resources.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the mapping feature in Garcia et al with the system in Yanosy because the best server for servicing a request is able to be determined (Garcia, paragraph 47).

Claim 19 discloses the method of claim 18, further including indexing network locations of each user of said plurality of users. Garcia et al further teaches maintaining an index of client addresses (paragraph 72).

Claim 20 discloses the method of claim 19, further including providing the application with the user index identifier for each user via an application server. Yanosy further teaches the middleware communicates between the application and the host platform (paragraph 32).

Claim 21 discloses the method of claim 20, further including sending data from an application server to at least one user of said plurality of users based on the communication interest of the at least one user and on the user index identifier of the at least one user. Yanosy further teaches the application notifies the middleware of a request and the middleware sends the data between the appropriate clients and servers (paragraph 29).

Claim 22 discloses the method of claim 18 wherein indexing of the plurality of users includes indexing new users to the network. Garcia et al further teaches a map is updated when changes occur (paragraph 53).

Claim 23 discloses the method of claim 18 wherein establishing the communication overlay tree is at least partially based on round trip travel times.

Yanosy further teaches mapping is based on quality of service requirements (paragraph 31).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chiang (US PGPUB US2001/0047477) teaches transparent user and session management for web applications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Gillis whose telephone number is 571-272-7952. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brian J Gillis
Examiner
Art Unit 2141

BJG
9/19/2007

JASON CARDONE
SUPERVISORY PATENT EXAMINER